

Appl. No.: 10/564,286
Amdt. dated May 11, 2009
Reply to Office Action of February 10, 2009

AMENDMENTS TO THE DRAWINGS

In the Office Action, the Examiner objected to the drawings for various reasons. In response to the objections, please replace Drawings 3a, 3b, 4, 5, 6a, and 6b with the replacement drawings in Appendix A labeled "Replacement Sheet."

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REMARKS/ARGUMENTS

This Amendment is filed in response to the Office Act on mailed February 10, 2009. In the Office Action, the drawings were objected to for various informalities, and Claims 1-3, 5, 14-16, 25-27, and 36 were rejected under 35 U.S.C. § 102(e) as being anticipated in light of Published U.S. Appl. No. 2003/0210329 ("Aagaard"). Additionally, Claims 4, 6-13, 17-24, and 28-35 were rejected as being obvious in light of various combinations of *Aagaard*, U.S. Patent No. 6,445,293 ("Alonso"), Published U.S. Appl. No. 2004/0085451 ("Chang"), and Published U.S. Appl. No. 2003/0071906 ("Masumoto"). In response to the Office Action, Claims 9, 20, and 31 have been canceled and Claims 1-8, 10-19, 21-30, and 32-36 have been amended. Thus, as a result of this Amendment, Claims 1-8, 10-19, 21-30, and 32-36 are pending in the application.

A. Objections to the Drawings

In response to the objections to the drawings, Applicant has filed replacement drawings for Drawings 3a, 3b, 4, 5, 6a, and 6b. The changes made to the drawings are supported by page 15 of the specification as originally filed.

B. Rejection of Independent Claims 1, 14, 25, and 36

To clarify the scope of the claims, independent Claims 1, 14, 25, and 36 although not coextensive, have been amended to generally recite the following elements:

- generating a wide image video sequence using a device having at least two video cameras substantially co-located in a predetermined relationship to each other such that there will be an overlap between images from the respective cameras by
 - forming a synthetic image from images of the cameras by (i) identifying corresponding parts in overlapping parts of the images, (ii) determining the relation between the respective coordinates for the pixels in the individual cameras and in the synthetic image, and (iii) calculating calibration parameters from the relation with the calculated calibration parameters being unique for the cameras and their current location as related to the object being recorded;

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- synchronously recording video sequences using each of the video cameras; and
- generating a wide image video sequence by combining the synchronously recorded video sequences using the calculated calibration parameters.

Applicant respectfully submits that at least the above-referenced features are not disclosed or suggested by *Aagaard*.

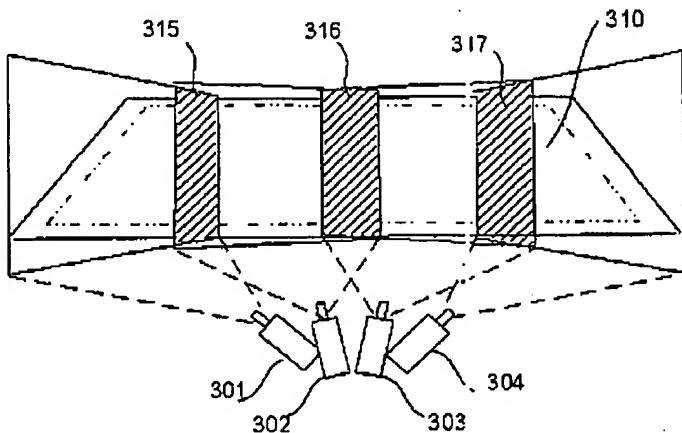
Generally, *Aagaard* discloses a system with a “plurality of video or other cameras located at various spatial locations around a target object, such as a sports stadium or athletic field.” *Aagaard*, paras. [0008] – [0010]. *Aagaard* notes that one “camera is selected as the current master camera, and the remaining plurality of cameras are robotically controlled as slaves to the master camera which follow the master camera’s field of view from different spatial perspectives.” *Id.* The slave cameras “may be controlled from a remote location which includes a master pan head used to directly control the selected ‘master’ camera . . . [, such that as] the master pan head is moved . . . , a master broadcaster computer . . . uses a software program to calculate new positional coordinates and camera settings for each of the plurality of ‘slave’ cameras. . . .” *Id.* By using this approach, outputting “the video feed from adjacent cameras in quick succession . . . gives the sensation of ‘spinning’ or ‘rotating’ around the target object.” *Id.* That is, by subsequently displaying the images captured by adjacent cameras, the viewer can be “moved around the target” while the target itself is “frozen,” providing the spinning or rotating effect.

In contrast *Aagaard*, independent Claims 1, 14, 25, and 36 are directed to generating a wide image video sequence using a device having at least two video cameras that are substantially co-located in a predetermined relationship to each other such that there will be an overlap between images from the respective cameras. Thus, because the cameras are substantially co-located, the cameras record images from substantially the same point of view. And generating the wide image video sequence includes forming a synthetic image from images of the respective cameras by (i) identifying corresponding parts in overlapping parts of the images, (ii) determining the relation between the respective coordinates for the pixels in the individual cameras and in the synthetic image, and (iii) calculating calibration parameters from the relation with the calculated calibration parameters being unique for the cameras and their current location as related to the object being recorded. This process also includes

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synchronously recording video sequences using each of the video cameras and generating a wide image video sequence by combining the synchronously recorded video sequences using the calculated calibration parameters. In other words, independent Claims 1, 14, 25, and 36 recite combining a plurality of video sequences recorded by the different cameras into a single wide image video sequence (see Figure 3a from the application below).

Fig. 3a



Moreover, on page 5 of the Office Action, the Examiner referenced paragraphs [0078] and [0172] and alleged that *Aagaard* discloses the generation of a wide image video sequence from each of the synchronously recorded video sequences. However, paragraph [0078] does not mention wide images at all, and paragraph [0172] describes that a 16:9 aspect ratio high definition camera with a wide angle lens could be used to capture the target image from a plurality of locations. Thereafter, each of the wide angle images in *Aagaard* could be broken up into a plurality of images that reside next to each other in real space. *Aagaard* asserts that its described approach is advantageous because the “spinning effect” can be achieved using a reduced number of cameras. Regardless, splitting a wide image into a plurality of non-wide images which are subsequently displayed to the viewer is the very opposite of what is recited in independent Claims 1, 14, 25, and 36 in which a plurality of non-wide images are combined to create a single wide image.

Additionally, when combining a plurality of images (image sequences) captured by different cameras into a single wide image, one must be able to project the different images on a

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common image plane for the combined images to be properly aligned and scaled so as to present a realistic wide image of the recorded scene to a viewer. To accomplish this, independent Claims 1, 14, 25, and 36 recite calculating calibration parameters as described in step 'a' and generating the wide image video sequence using the calculated calibration parameters as described in step 'c.' As discussed above, *Aagaard* does not relate to combining a plurality of images into a single wide image.

Accordingly, Applicant respectfully submits that the concepts recited in independent Claims 1, 14, 25, and 36 are not disclosed or suggested by *Aagaard* and therefore requests that the rejection of these claims be withdrawn.

C. Rejection of Dependent Claims 2-3, 5, 15-16, and 26-27

Dependent Claims 2-3, 5, 15-16, and 26-27 depend from independent Claims 1, 14, and 25 respectively and therefore include all of the recitations of the corresponding base claim and any intervening recitations. Accordingly, for this reason and for the reasons stated above with respect to independent Claims 1, 14, and 25, dependent Claims 2-3, 5, 15-16, and 26-27 are patentable over the prior art.

D. Rejection of Dependent Claim 4

In the Office Action, the Examiner rejected dependent Claim 4 as being obvious in light of *Aagaard* and *Alonso*. However, *Alonso* does not fulfill the above-discussed deficiencies of *Aagaard*. Therefore, Applicant respectfully submits that dependent Claim 4 is not obvious in light of any combination of the references cited in the Office Action and requests that the rejection of this claim be withdrawn.

E. Rejection of Dependent Claims 6-10, 17-21, and 28-32

In the Office Action, the Examiner rejected dependent Claims 6-10, 17-21, and 28-32 as being obvious in light of *Aagaard* and *Chang*. However, *Chang* does not fulfill the above-discussed deficiencies of *Aagaard*. Therefore, Applicant respectfully submits that dependent Claims 6-10, 17-21, and 28-32 are not obvious in light of any combination of the references cited in the Office Action and requests that the rejection of these claims be withdrawn.

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F. Rejection of Dependent Claims 11, 13, 22, 24, 33, and 35

In the Office Action, the Examiner rejected dependent Claims 11, 13, 22, 24, 33, and 35 as being obvious in light of *Aagaard*, *Chang*, and *Matsumoto*. However, *Chang* and *Matsumoto* do not fulfill the above-discussed deficiencies of *Aagaard*. Therefore, Applicant respectfully submits that dependent Claims 11, 13, 22, 24, 33, and 35 are not obvious in light of any combination of the references cited in the Office Action and requests that the rejection of these claims be withdrawn.

G. Rejection of Dependent Claim 12, 23, and 34

In the Office Action, the Examiner rejected dependent Claims 12, 23, and 34 as being obvious in light of *Aagaard*, *Chang*, and *Alonso*. However, *Chang* and *Alonso* do not fulfill the above-discussed deficiencies of *Aagaard*. Therefore, Applicant respectfully submits that dependent Claims 12, 23, and 34 are not obvious in light of any combination of the references cited in the Office Action and requests that the rejection of these claims be withdrawn.

H. Conclusion

The foregoing is submitted as a full and complete response to the Office Action mailed February 10, 2009. The foregoing amendments and remarks are believed to have placed the present application in condition for allowance, and such action is respectfully requested. The Examiner is encouraged to contact Applicant's undersigned attorney at (404) 881-4381 or e-mail at dane.baltich@alston.com to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

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Respectfully submitted,



Dane A. Baltich
Registration No. 55,274

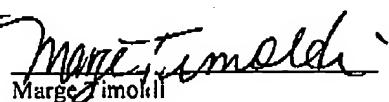
Customer No. 00826
ALSTON & BIRD LLP
Bank of America Plaza
101 South Tryon Street, Suite 4000
Charlotte, NC 28280-4000
Tel Atlanta Office (404) 881-7000
Fax Atlanta Office (404) 881-7777

CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being facsimile transmitted to the US Patent and Trademark Office
at Fax No. (571) 273-8300 on the date shown below.

May 11, 2009

Date


Marge Timoldi

APPENDIX A